

ABSTRACT

Methods for passivating stainless steel after acid pickling treatment in the absence of nitric acid are provided. The methods include the steps of cleaning the pickled stainless steel with an alkaline composition to obtain clean steel, activating the clean steel with an activator composition to obtain activated steel, and passivating the activated steel with a passivating composition in the absence of nitric acid. In the preferred embodiment, the activator composition contains at least one activator, the activator having a significantly higher binding affinity for iron than for chromium as evidenced by their metal complex formation constants.